COVID-19 morbidity and mortality by race, ethnicity and spoken language in Washington state

Washington State Department of Health

January 20, 2021

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NOTE: Beginning the week of December 23, 2020, probable cases are included in the metrics calculated for morbidity and mortality associated with race, ethnicity, and spoken language. Probable cases are individuals with a positive antigen test for COVID-19. Also, as of December 16, 2020, probable cases are included in all case, hospitalization, and death counts on the Washington State Department of Health COVID-19 dashboard. Probable cases since June 2020, when the first antigen results were reported in Washington, are now included in the dashboard. This places the report on "COVID-19 Morbidity and Mortality by Race, Ethnicity and Spoken Language in Washington State" in alignment with the Washington State Department of Health COVID-19 Date Dashboard.

Overview

The impacts of COVID-19 morbidity and mortality have not been felt equally by all populations in Washington state. The pandemic has exacerbated the underlying and persistent inequities among historically marginalized communities and those disproportionately impacted due to structural racism and other forms of systemic oppression. This report provides an overview of confirmed or probable COVID-19 case, hospitalization, and death rates by race and ethnicity at state and regional levels. It also provides counts and percentages of confirmed or probable cases and hospitalizations by primary language spoken. Throughout this report, the COVID-19 case definition includes both molecular testing and antigen testing. Molecular positive cases are considered confirmed cases and antigen positive cases are considered probable cases. All hospitalization, death, and testing data reported here are based on positive molecular or antigen test results.

All rates presented in this report are adjusted for age using the Washington state population distribution based on the Office of Financial Management's (OFM) April 1, 2019 population estimates by age, sex, race, and Hispanic origin. The rate calculations are for the population groups available from OFM for the Washington state population and follow Department of Health guidelines. Hispanic ethnicity was assigned first, regardless of race, and then racial

groups were identified for those identifying as non-Hispanic. Based on this, the current report includes the following groups:

- Hispanic; and
- non-Hispanic race categorizations for white, Black, Native Hawaiian and Pacific Islander, Asian, and American Indian/Alaska Native.

While this allows assessment of data by race and ethnicity groups, this categorization is incomplete and does not reflect the diversity of people and experiences across the state. Additionally, there is a significant lack of race and ethnicity reporting for confirmed or probable COVID-19 cases and hospitalizations (about 44% missing) and for deaths (about 6% missing). Primary language spoken is missing for about 60% of cases and hospitalizations. Age information is missing for a small percentage of confirmed or probable cases (about 0.1%), and these cases are not included in age-adjusted rates. The lack of data limits our ability to draw firm conclusions; however, there are some concerning patterns reported below.

Cumulative age-adjusted confirmed or probable COVID-19 case, hospitalization, and death rates by race and ethnicity per 100,000 population

The table and figures below describe the counts and age-adjusted rates per 100,000 population in Washington by race and ethnicity for confirmed or probable cases, hospitalizations, and deaths for the entire time period from the start of the pandemic through 2021-01-18 based on the specimen collection date. 95% confidence intervals are included in the charts.

The data show that communities of color are disproportionately impacted by COVID-19 in significant ways, including the following.

COVID-19 confirmed or probable case rates

- Native Hawaiian and Other Pacific Islander (NHOPI) and Hispanic populations have the highest age-adjusted confirmed or probable case rates while white and Asian populations have the lowest case rates.
- Confirmed or probable case rates for NHOPI and Hispanic populations are approximately four times higher than case rates for Asian and white populations.
- Confirmed or probable case rates for Black populations are approximately twice as high as Asian and white populations.

COVID-19 hospitalization rates among confirmed or probable cases

- Hospitalization rates among confirmed or probable COVID-19 cases are the highest for NHOPI populations and lowest for white populations.
- NHOPI hospitalization rates among confirmed or probable COVID-19 cases are eleven times higher than white populations.
- Hispanic hospitalization rates among confirmed or probable COVID-19 cases are approximately six times higher than white populations.

- Hospitalization rates among confirmed or probable COVID-19 cases for Black and American Indian and Alaska Native (AIAN) populations are three times higher compared to white populations.

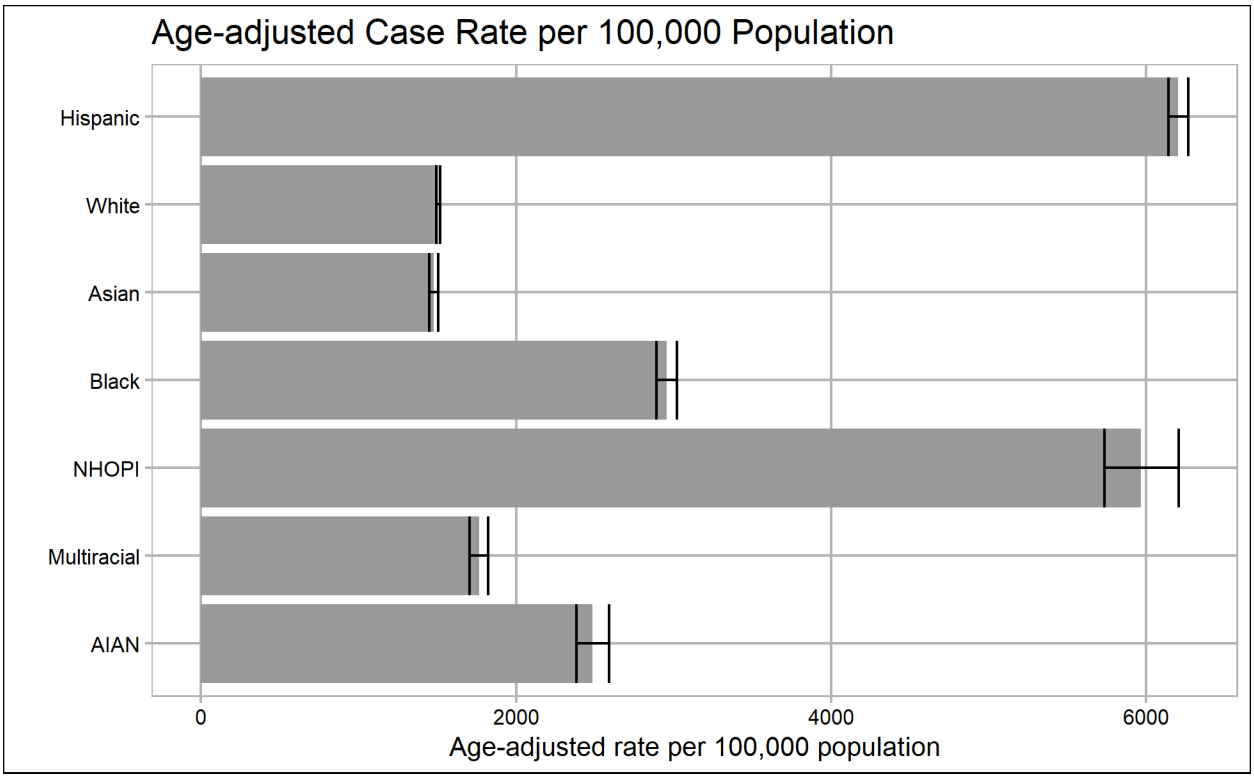
COVID-19 death rates among confirmed or probable cases

- White populations have the lowest death rates among confirmed or probable COVID-19 cases of all race/ethnicity groups.
- NHOPI populations have death rates among confirmed or probable COVID-19 cases that are six times higher than whites.
- AIAN and Hispanic populations have death rates among confirmed or probable COVID-19 cases that are four times higher than whites.
- Black populations have death rates among confirmed or probable COVID-19 cases that are about twice as high as white populations.

Table 1. Confirmed or probable COVID-19 case, hospitalization, and death count and age-adjusted rates by race/ethnicity

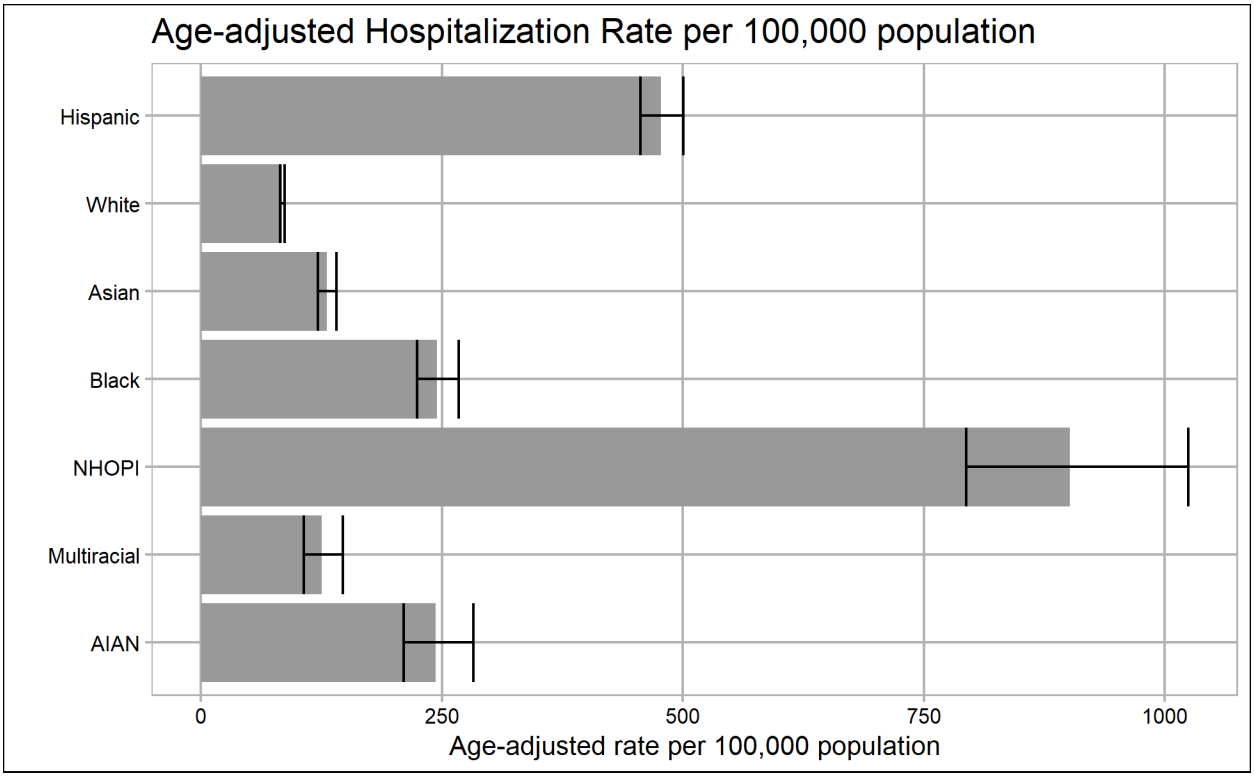
Race/Ethnicity	Case Count	Age-Adjusted Case Rate per 100,000	Hospitalization Count	Age-Adjusted Hospitalization Rate per 100,000	Death Count	Age-Adjusted Death Rate per 100,000
All Races	291,720	3865.7	16,626	220.3	3,903	51.7
Unknown	128,032		6,931		231	
Hispanic	54,975	6204.4	2,388	477.5	458	148.6
White	77,040	1506	5,129	84.2	2,592	39.9
Asian	10,186	1476.3	732	130.5	263	56.3
Black	8,779	2956.1	552	244.7	121	74.1
NHOPI	3,096	5967.2	318	901.7	61	248.2
Multiracial	4,704	1764.1	183	125.3	43	46
AIAN	2,320	2484.3	196	243.6	78	123.3
Other	2,588		197		56	

The following graph indicates the age-adjusted confirmed or probable COVID-19 case rate per 100,000 population by race/ethnicity during the time period 2020-01-19 to 2021-01-18



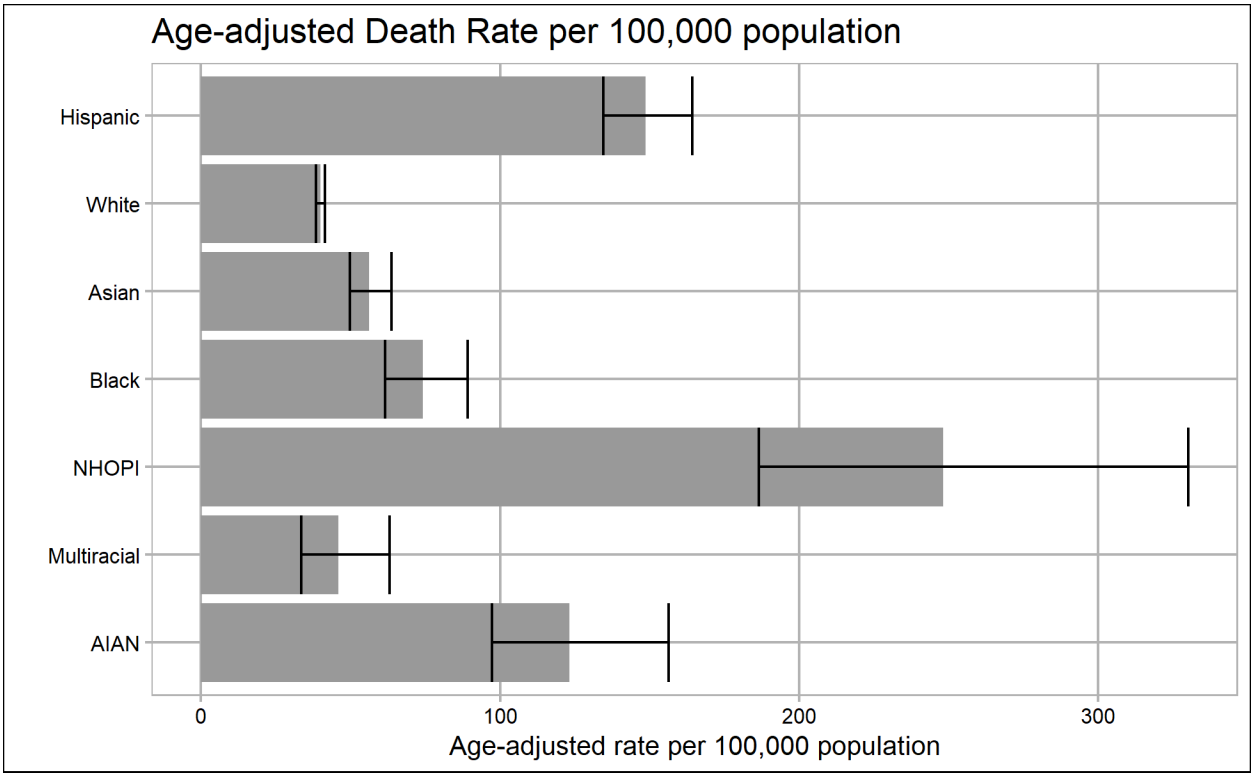
Source: Washington Disease Reporting System (WDRS)

The following graph indicates the age-adjusted hospitalization rate among confirmed or probable COVID-19 cases per 100,000 population by race/ethnicity during the time period 2020-01-19 to 2021-01-18



Source: Washington Disease Reporting System (WDRS)

The following graph indicates the age-adjusted death rate among confirmed or probable COVID-19 cases per 100,000 population by race/ethnicity during the time period 2020-01-19 to 2021-01-18



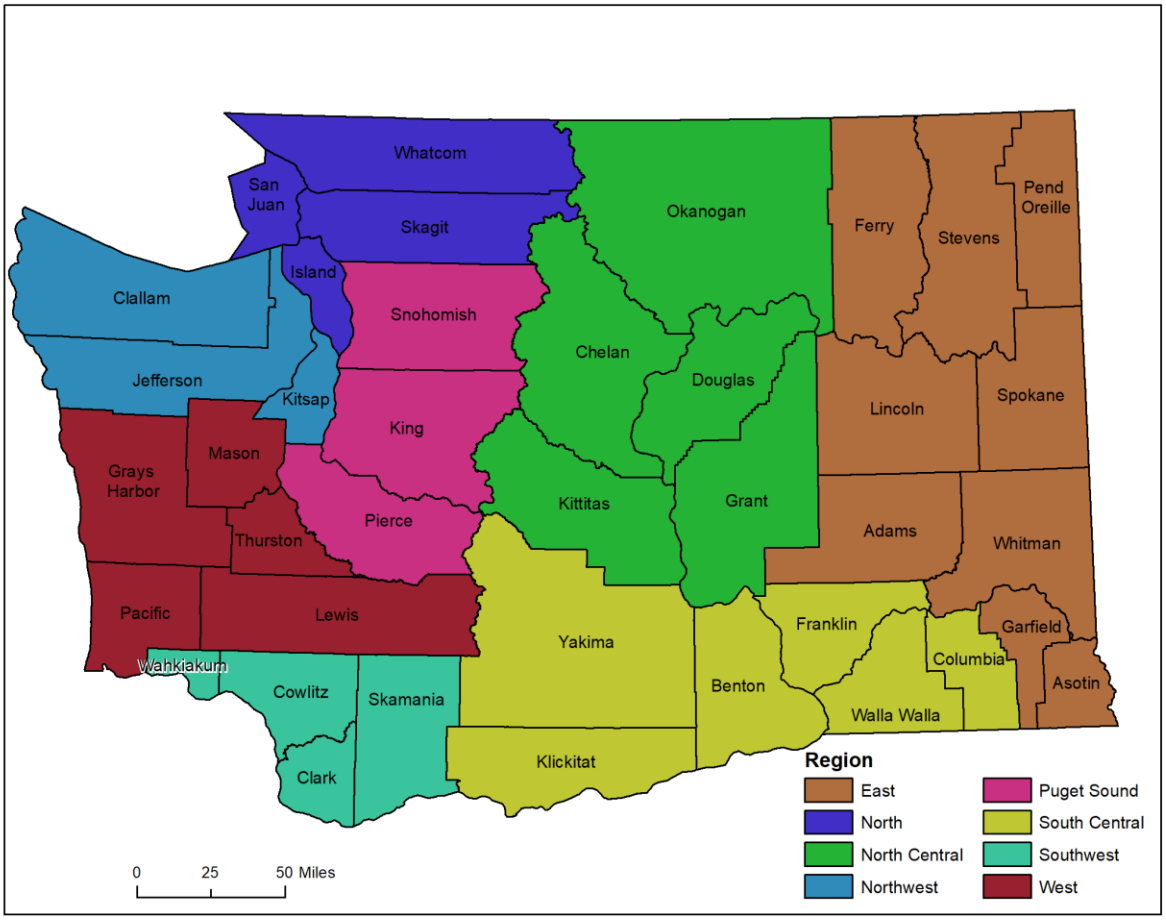
Source: Electronic Death Registration System (EDRS) and Washington Health and Life Events System (WHALES)

Analysis of confirmed or probable COVID-19 cases, hospitalizations, and deaths by geographic region

Regional groupings of Washington state counties

Some counties may not have sufficient case counts to analyze trends by race and ethnicity. In order to incorporate data from counties of all sizes, counties were assigned into one of 8 analytic regions (see Map of Washington Counties and Analysis Regions below). The regions presented were developed by the Washington State Department of Health in order to better understand geographic differences in disease spread and how disease spread may be changing over time. While infection rates may not be the same within any given region, this regional grouping allows for more specific geographic analyses without excluding any counties or communities due to concerns about smaller numbers.

Map of Washington counties by DOH analysis regions



Missing race/ethnicity data by region

The Southwest, East, and North Central regions have the highest percentage of missing race/ethnicity data among confirmed or probable COVID-19 cases and the North region has the lowest percentage of missing data on race/ethnicity, as indicated in the following table. The total number of confirmed or probable cases, and the number and percentage of confirmed or probable cases with missing data are shown in Table 2.

Table 2. Counts and percentage of confirmed or probable COVID-19 cases with unknown race/ethnicity by DOH analytic region.

Region	Case Count	Cases with Unknown Race/Ethnicity	% Cases with Unknown Race/Ethnicity
East	39,387	22,816	58%
North	9,891	1,988	20%
North Central	19,069	9,371	49%

Region	Case Count	Cases with Unknown Race/Ethnicity	% Cases with Unknown Race/Ethnicity
Northwest	5,861	2,163	37%
Puget Sound	131,185	54,656	42%
South Central	51,206	18,359	36%
Southwest	19,795	12,250	62%
West	14,110	5,157	37%
Unknown	1,524	1,505	99%

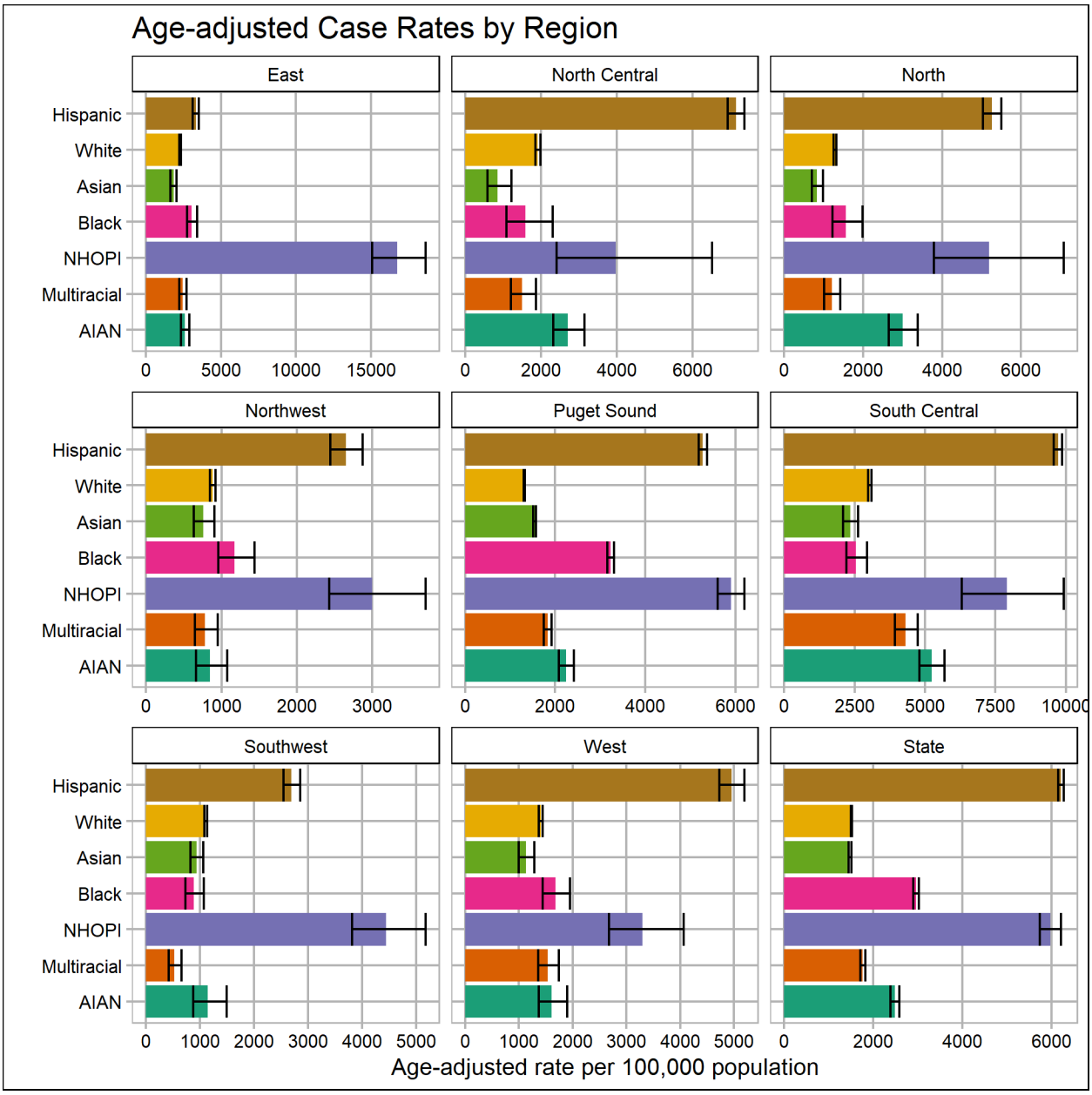
Source: Washington Disease Reporting System (WDRS)
Includes data from 2020-01-19 to 2021-01-18

Cumulative age-adjusted confirmed or probable COVID-19 case rates by race, ethnicity, and analytic region

The following figures describe the age-adjusted confirmed or probable COVID-19 case rates per 100,000 population by race/ethnicity and region. They were calculated using the confirmed or probable cases with known race/ethnicity (about 56% of all reported cases).

It is important to note that the numeric scale differs across regions, so use caution when comparing two or more regions, as their scales may differ. The last figure (lower right corner) presents the age-adjusted confirmed or probable COVID-19 case rates for the whole state.

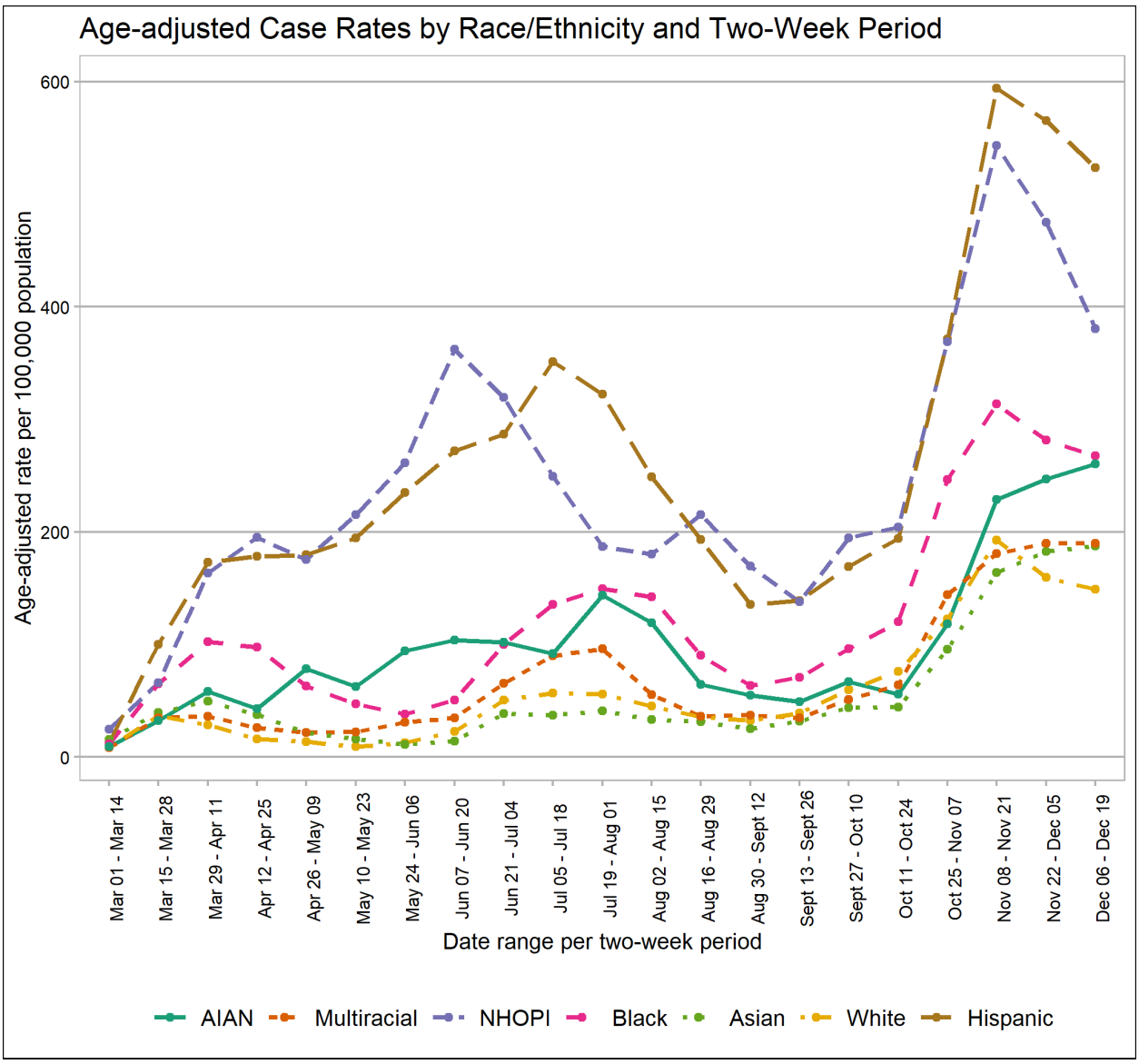
These data indicate that COVID-19 is found in significant numbers across racial and ethnic groups throughout the state, and it is not confined to certain areas, such as rural, urban, or suburban regions. Population centers in Puget Sound contribute substantially to the counts. However less populated regions, like South Central Washington, show larger rate differences by race/ethnicity, although they have smaller populations of racial and ethnic minorities. Further, while extreme disparities exist, people of all races and ethnicities are impacted.



Source: Washington Disease Reporting System (WDRS)
Includes data from 2020-01-19 to 2021-01-18

Age-adjusted confirmed or probable COVID-19 case rates by race and ethnicity per two-week period (Mar-Dec* 2020)

*Nov 2020 data include all confirmed or probable cases with a specimen collection date through 2020-11-21 to include the most recent, complete two-week period of data collection.



Confirmed or probable COVID-19 case rates, adjusted for age by race and ethnicity, were calculated to better understand how race- and ethnicity-specific patterns may be changing over time by two-week period. Race/ethnicity-specific counts and age-adjusted rates increased for all race/ethnicity groups through July and early August 2020. All groups declined from early August to mid/late-August and flattened through September 2020. All race/ethnicity-age-adjusted rates began to rapidly increase in mid-October through the end of November. Rates of confirmed or probable cases remain highest for Hispanic and NHOPI population, and higher Black and AIAN populations in comparison to white, Asian, and multiracial populations.

Table 3. Age-adjusted confirmed or probable COVID-19 case rates by race and ethnicity per two-week period (Mar 1 - Dec 19, 2020)

Race/Ethnicity	Two-Week Period	Case Count	Age-Adjusted Case Rate per 100,000	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Hispanic	Mar 01-Mar 14	89	13.1	10.3	16.7
	Mar 15-Mar 28	654	100.1	91.4	109.5
	Mar 29-Apr 11	1,152	173.3	161.7	185.7
	Apr 12-Apr 25	1,325	178.2	167.1	190.1
	Apr 26-May 09	1,437	179.7	168.9	191.2
	May 10-May 23	1,645	194.7	183.9	206.2
	May 24-Jun 06	1,898	235.2	222.7	248.4
	Jun 07-Jun 20	2,237	271.8	258.5	285.8
	Jun 21-Jul 04	2,508	286.9	273.5	300.9
	Jul 05-Jul 18	3,194	351.4	337.2	366.2
	Jul 19-Aug 01	2,939	322.4	308.8	336.6
	Aug 02-Aug 15	2,238	248.8	236.8	261.4
	Aug 16-Aug 29	1,748	193.4	182.8	204.6
	Aug 30-Sept 12	1,224	135.4	126.6	144.9
	Sept 13-Sept 26	1,222	138.8	129.7	148.6
	Sept 27-Oct 10	1,542	169.2	159.4	179.7
	Oct 11-Oct 24	1,808	194.3	184.1	205.2
	Oct 25-Nov 07	3,493	371.4	357.0	386.4
	Nov 08-Nov 21	5,425	594.2	575.7	613.3
	Nov 22-Dec 05	5,252	565.5	547.5	584.1
	Dec 06-Dec 19	4,814	523.4	506.0	541.3
White	Mar 01-Mar 14	504	8.6	7.8	9.3
	Mar 15-Mar 28	2,057	36.6	35.1	38.3
	Mar 29-Apr 11	1,592	28.4	27.1	29.9
	Apr 12-Apr 25	897	15.9	14.9	17.0
	Apr 26-May 09	769	13.7	12.8	14.7
	May 10-May 23	523	9.5	8.7	10.4
	May 24-Jun 06	675	12.9	12.0	13.9
	Jun 07-Jun 20	1,174	22.8	21.5	24.1

Race/Ethnicity	Two-Week Period	Case Count	Age-Adjusted Case Rate per 100,000	Lower 95% Confidence Interval	Upper 95% Confidence Interval
	Jun 21-Jul 04	2,494	50.6	48.6	52.7
	Jul 05-Jul 18	2,848	56.7	54.6	58.8
	Jul 19-Aug 01	2,847	55.7	53.7	57.9
	Aug 02-Aug 15	2,292	45.2	43.4	47.1
	Aug 16-Aug 29	1,799	35.8	34.2	37.5
	Aug 30-Sept 12	1,635	32.4	30.9	34.0
	Sept 13-Sept 26	2,017	39.3	37.6	41.1
	Sept 27-Oct 10	3,016	59.7	57.6	61.9
	Oct 11-Oct 24	3,879	76.3	73.9	78.7
	Oct 25-Nov 07	6,214	122.5	119.4	125.6
	Nov 08-Nov 21	9,789	192.9	189.1	196.8
	Nov 22-Dec 05	8,140	159.4	155.9	162.9
	Dec 06-Dec 19	7,626	149.0	145.6	152.4
Asian	Mar 01-Mar 14	91	15.5	12.5	19.3
	Mar 15-Mar 28	260	39.6	35.0	45.0
	Mar 29-Apr 11	327	49.8	44.5	55.6
	Apr 12-Apr 25	246	37.5	33.0	42.6
	Apr 26-May 09	145	21.6	18.3	25.6
	May 10-May 23	110	16.2	13.4	19.7
	May 24-Jun 06	79	11.4	9.1	14.2
	Jun 07-Jun 20	97	14.2	11.6	17.5
	Jun 21-Jul 04	269	38.6	34.2	43.6
	Jul 05-Jul 18	258	37.0	32.6	41.9
	Jul 19-Aug 01	282	41.2	36.6	46.5
	Aug 02-Aug 15	235	33.3	29.2	37.9
	Aug 16-Aug 29	223	31.6	27.7	36.1
	Aug 30-Sept 12	173	25.3	21.7	29.5
	Sept 13-Sept 26	219	32.1	28.0	36.7
	Sept 27-Oct 10	313	44.0	39.3	49.3
	Oct 11-Oct 24	321	44.6	39.9	49.8
	Oct 25-Nov 07	665	95.6	88.4	103.3

Race/Ethnicity	Two-Week Period	Case Count	Age-Adjusted Case Rate per 100,000	Lower 95% Confidence Interval	Upper 95% Confidence Interval
	Nov 08-Nov 21	1,151	163.9	154.5	173.9
	Nov 22-Dec 05	1,262	182.6	172.6	193.2
	Dec 06-Dec 19	1,279	187.3	177.1	198.1
Black	Mar 01-Mar 14	29	11.9	8.1	17.6
	Mar 15-Mar 28	171	65.2	55.6	76.3
	Mar 29-Apr 11	269	102.5	90.3	116.4
	Apr 12-Apr 25	275	97.7	86.4	110.5
	Apr 26-May 09	183	63.0	54.2	73.1
	May 10-May 23	141	47.2	39.8	56.0
	May 24-Jun 06	107	38.3	31.3	46.8
	Jun 07-Jun 20	157	50.8	43.3	59.7
	Jun 21-Jul 04	311	100.0	89.1	112.1
	Jul 05-Jul 18	421	135.6	123.0	149.5
	Jul 19-Aug 01	446	149.3	135.5	164.4
	Aug 02-Aug 15	416	142.4	128.9	157.4
	Aug 16-Aug 29	267	90.5	79.9	102.5
	Aug 30-Sept 12	190	63.5	54.8	73.5
	Sept 13-Sept 26	207	70.6	61.2	81.4
	Sept 27-Oct 10	297	96.3	85.7	108.3
	Oct 11-Oct 24	361	120.2	108.0	133.9
	Oct 25-Nov 07	765	246.6	229.3	265.1
	Nov 08-Nov 21	955	313.7	293.9	334.9
	Nov 22-Dec 05	826	281.5	262.2	302.2
	Dec 06-Dec 19	774	267.6	248.6	287.9
NHOPI	Mar 01-Mar 14	10	24.9	12.3	50.1
	Mar 15-Mar 28	25	65.8	41.1	105.3
	Mar 29-Apr 11	64	163.6	122.1	219.2
	Apr 12-Apr 25	100	195.0	157.7	241.2
	Apr 26-May 09	86	175.5	139.2	221.1
	May 10-May 23	115	215.4	176.4	263.1
	May 24-Jun 06	142	261.6	216.4	316.2

Race/Ethnicity	Two-Week Period	Case Count	Age-Adjusted Case Rate per 100,000	Lower 95% Confidence Interval	Upper 95% Confidence Interval
	Jun 07-Jun 20	198	362.3	311.5	421.5
	Jun 21-Jul 04	173	319.6	271.9	375.5
	Jul 05-Jul 18	134	249.4	207.5	299.9
	Jul 19-Aug 01	95	186.8	148.2	235.5
	Aug 02-Aug 15	91	180.2	143.4	226.4
	Aug 16-Aug 29	107	215.3	173.3	267.6
	Aug 30-Sept 12	92	169.8	135.9	212.1
	Sept 13-Sept 26	71	138.0	104.9	181.6
	Sept 27-Oct 10	88	194.7	151.3	250.5
	Oct 11-Oct 24	98	204.5	159.8	261.7
	Oct 25-Nov 07	196	368.9	316.6	429.8
	Nov 08-Nov 21	294	543.5	480.5	614.7
	Nov 22-Dec 05	242	475.0	410.7	549.3
	Dec 06-Dec 19	208	380.6	328.0	441.8
Multiracial	Mar 01-Mar 14	11	8.4	4.3	16.3
	Mar 15-Mar 28	68	34.7	26.5	45.5
	Mar 29-Apr 11	76	36.0	27.7	46.9
	Apr 12-Apr 25	51	26.0	18.9	35.6
	Apr 26-May 09	54	21.6	16.0	29.2
	May 10-May 23	49	22.4	16.3	30.9
	May 24-Jun 06	65	30.7	23.3	40.4
	Jun 07-Jun 20	104	34.9	27.9	43.7
	Jun 21-Jul 04	200	65.3	55.3	77.1
	Jul 05-Jul 18	227	90.1	77.4	104.9
	Jul 19-Aug 01	240	96.4	82.8	112.2
	Aug 02-Aug 15	157	55.5	46.0	67.0
	Aug 16-Aug 29	102	36.3	29.0	45.4
	Aug 30-Sept 12	102	37.3	29.3	47.4
	Sept 13-Sept 26	86	34.7	26.9	44.8
	Sept 27-Oct 10	134	51.1	41.5	63.0
	Oct 11-Oct 24	176	64.3	53.9	76.6

Race/Ethnicity	Two-Week Period	Case Count	Age-Adjusted Case Rate per 100,000	Lower 95% Confidence Interval	Upper 95% Confidence Interval
	Oct 25-Nov 07	398	144.2	128.1	162.2
	Nov 08-Nov 21	506	180.7	163.2	200.2
	Nov 22-Dec 05	516	190.0	172.0	209.9
	Dec 06-Dec 19	520	189.8	171.9	209.7
	Mar 01-Mar 14	7	9.2	4.1	20.4
	Mar 15-Mar 28	29	32.5	22.3	47.3
	Mar 29-Apr 11	51	58.4	44.1	77.4
	Apr 12-Apr 25	41	43.0	31.7	58.5
	Apr 26-May 09	75	78.3	62.4	98.3
	May 10-May 23	58	62.4	48.0	81.2
	May 24-Jun 06	87	94.3	76.1	116.8
	Jun 07-Jun 20	99	103.7	85.0	126.4
	Jun 21-Jul 04	94	102.0	82.9	125.4
	Jul 05-Jul 18	86	92.0	74.0	114.4
AIAN	Jul 19-Aug 01	135	143.6	120.9	170.6
	Aug 02-Aug 15	107	119.5	98.1	145.7
	Aug 16-Aug 29	61	64.7	50.0	83.6
	Aug 30-Sept 12	51	55.1	41.6	73.0
	Sept 13-Sept 26	48	49.4	37.2	65.6
	Sept 27-Oct 10	64	66.9	52.3	85.6
	Oct 11-Oct 24	51	55.7	41.9	74.1
	Oct 25-Nov 07	110	118.3	97.7	143.2
	Nov 08-Nov 21	212	228.8	199.4	262.6
	Nov 22-Dec 05	233	247.2	216.9	281.7
	Dec 06-Dec 19	242	260.7	229.3	296.6

Source: Washington Disease Reporting System (WDRS)

Cumulative crude confirmed or probable case counts and percentages by language spoken

Analysis of language spoken provides another important method to understand health disparities and communities impacted by COVID-19. Use of one method alone may mask health

disparities and community-specific impacts. Almost half of reported confirmed or probable cases are missing information on primary language. Despite missing data, there are some important observations.

The following table presents counts and percentages of confirmed or probable cases, by primary language spoken. The percentage of the Washington state population 5 years and over with limited English proficiency that speak each language are also included to provide context. The information on the percentage of the Washington state population with limited English proficiency come from the Office of Financial Management 2016 estimates. Findings should be interpreted with caution due to the high proportion of missing data (60%).

Table 4. Confirmed or probable COVID-19 case count and percentage of cases by primary language spoken

Language	Case Count	% of Cases	% of WA Population with Limited English Proficiency*
All Cases	292,028	100.0%	NA
Unknown Language	174,295	59.7%	NA
Known Language	117,733	40.3%	NA
English	91,738	77.9*%	NA
Spanish	21,571	18.3*%	6.4
Marshallese	318	0.3*%	0.1
Vietnamese	782	0.7*%	0.5
Russian	919	0.8*%	0.3
Chinese (all)	196	0.2*%	0.3
Ukrainian	213	0.2*%	0.2
Somali	249	0.2*%	0.1
Tagalog	115	0.1*%	0.1
Amharic	132	0.1*%	0.1
Other	1,500	1.3*%	NA

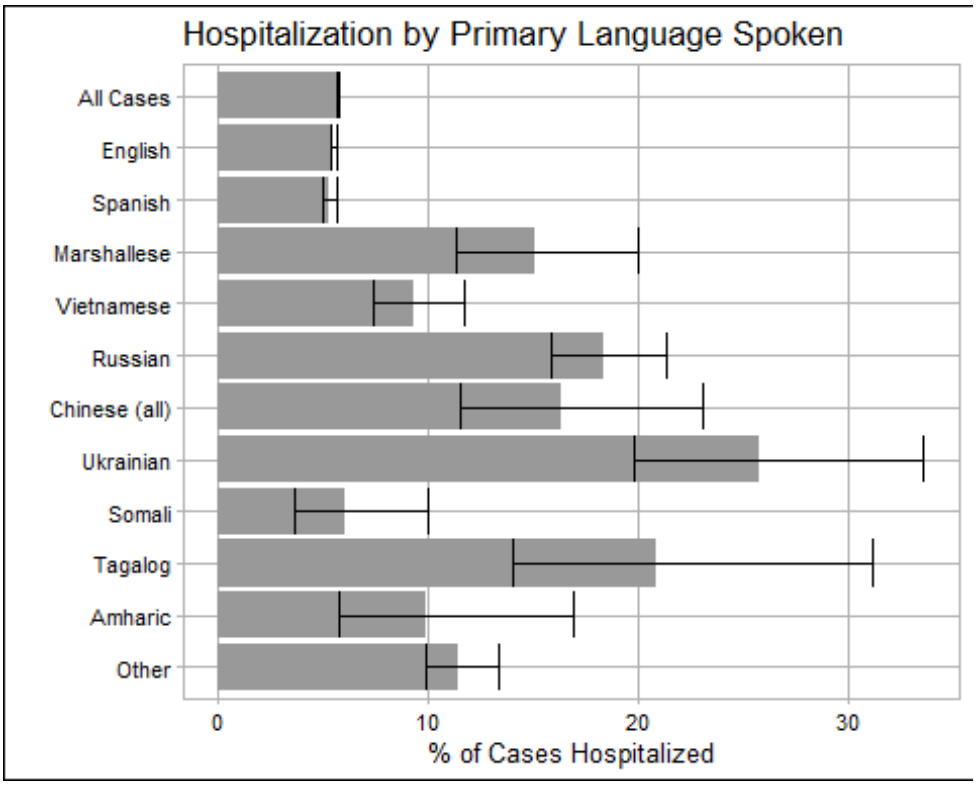
*For more information on the selected WA populations by primary language reported here, please see the WA OFM methodology, https://ofm.wa.gov/sites/default/files/public/legacy/pop/subject/ofm_pop_limited_english_proficiency_methodology.pdf

Cumulative hospitalization percentages among confirmed or probable COVID-19 cases by language spoken

The following table and graph present the percentages of confirmed or probable cases who were hospitalized, by primary language spoken. The high rates of hospitalizations among confirmed or probable cases whose primary language was other than English or Spanish suggests that increased exposures and/or barriers to care may contribute to more severe disease in these populations. Languages with less than 10 individuals hospitalized were removed from this analysis to protect patient confidentiality. Findings should be interpreted with caution due to the high proportion of missing data (60%).

Table 5: Percentages of confirmed or probable COVID-19 cases hospitalized by primary language spoken

Language	Case Count	Hospitalization Count	% language specific cases hospitalized
All Cases	292,028	16,631	5.7%
English	91,738	5,044	5.5%
Spanish	21,571	1,140	5.3%
Marshallese	318	48	15.1%
Vietnamese	782	73	9.3%
Russian	919	169	18.4%
Chinese (all)	196	32	16.3%
Ukrainian	213	55	25.8%
Somali	249	15	6%
Tagalog	115	24	20.9%
Amharic	132	13	9.8%
Other	1,500	172	11.5%



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